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10/598,373	12/27/2006	Stanley Shigezo Swallow	78104114 - KE/GM/N19082	3270
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Intellectual Property Dept. Dewitt Ross & Stevens SC 2 East Mifflin Street Suite 600 Madison, WI 53703-2865			CHOI, PETER Y	
			ART UNIT	PAPER NUMBER
			1794	
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			02/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket-ip@dewittross.com

Office Action Summary	Application No. 10/598,373	Applicant(s) SWALLOW ET AL.	
	Examiner PETER Y. CHOI	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,8,9,15,17,18,20 and 27-38 is/are pending in the application.
- 4a) Of the above claim(s) 27 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,15,17,18,20,28-35,37 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species II in the reply filed on December 14, 2009, is acknowledged. The traversal is on the ground(s) that the species have the same characteristics save for the shape of their paths, and in order to search for relevant art, the scope of a search for the invention with a spiral path will necessarily require a review of art dealing with paths of other shapes, including serpentine shapes. This is not found persuasive because species refer to the different embodiments of the invention. Species may be either independent or related as disclosed (see MPEP §806.04 and §806.04(b)). Where two or more species are claimed, a requirement for restriction to a single species may be proper if the species are mutually exclusive. Claims to different species are mutually exclusive if one claim recites limitations disclosed for a first species but not a second, while a second claim recites limitations disclosed only for the second species and not the first. This may also be expressed by saying that to require restriction between claims limited to species, the claims must not overlap in scope. The arrangement of the conductive paths in a serpentine manner or a spiral manner are independent and distinct, and the scope of a serpentine path does not overlap in scope with a spiral path since each denotes a different path. Additionally, as shown in Figures 6 and 7 of Applicants' specification, a serpentine path is independent and distinct from a spiral path and each would require a separate field of search. Claims 27 and 36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 38 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 38, the claim recites that the conductive path includes interdigitated subpaths. Applicants' specification as originally filed does not provide support for such a structure.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 28, 29 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 28 and 37, the claims recite that the conductive path is arranged in series in a spiral manner. It is unclear whether the limitation directed to the arrangement in a "spiral manner" is indicating the structure of the conductive path or the manner in which the conductive path is formed. Additionally, if the limitation is directed to a structure, it is unclear what the scope and structure of the conductive path arranged in series in a spiral manner

Art Unit: 1794

necessarily entails as Applicants' specification does not define or set forth objective characteristics associated with such a structure.

Regarding claim 29, the claim recites that the conductive path is comb-like with the fingers of the comb being interlaced. It is unclear what conductive paths are "comb-like" within the scope of the claim, as Applicants' specification does not define or set forth objective characteristics associated with such a structure.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 8, 9, 17, 18, 20, 28-32, 34, 35, 37, and 38 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Pub. No. 2003/0119391 to Swallow.

Regarding claims 1, 8, 9, 17, 18, 20, 28, and 29, Swallow teaches a fabric having a woven construction, including in its woven construction a plurality of spaced first elongated electrically conductive filaments or fibers and a plurality of spaced second elongated electrically

Art Unit: 1794

conductive filaments or fibers, the first elongated electrically conductive filaments or fibers being crossed by the second elongated electrically conductive filaments or fibers at a plurality of crossover points, wherein the fabric includes a warp and a weft, the warp including at least one of the first electrically conductive filaments or fibers and the weft including at least one of the second electrically conductive filaments or fibers, wherein the fabric includes insulating fibers or filaments which bias the first and second electrically conductive filaments or fibers apart at a crossover point, wherein the woven construction includes yarn and the first and/or second electrically conductive filaments or fibers include warp and/or weft floats over or under more than one yarn to effect the biasing apart of first and second electrically conductive filaments or fibers at a crossover point, wherein the fabric includes at least one instance of a crossover point at which the first and second electrically conductive filaments or fibers are permanently biased apart and at least one instance of a crossover point at which the corresponding first and second electrical conductors are permanently physically connected together, wherein the one or more crossover points at which the corresponding first and second electrically conductive filaments or fibers are permanently physically connected together are effected by means of a plain weave structure local to the crossover point, wherein the permanently connected crossover points and the permanently biased apart crossover points bring into being at least one conductive path within the fabric that is composed of two or more contiguous segments of two or more electrically conductive filaments or fibers (see entire document including paragraphs 0001-0020, 0035-0043, 0060-0073, 0076-0092, claims 1-16, Figures 1-12).

Additionally, the prior art appears to teach that the continuous segments of electrically conductive filaments or fibers have a length and/or number and/or arrangement and/or linear

Art Unit: 1794

resistance chosen so as to constitute one or more resultant conductive paths that conform to a desired geometry and a desired electrical characteristic (*see for example* Id., paragraphs 0076-0092, Figures 10-12). Additionally and/or alternatively, it would have been obvious to one of ordinary skill in the conductive fabric art at the time the invention was made to form the conductive fabric of the prior art, and adjusting the segments to have a desired length and/or number and/or arrangement and/or linear resistance, based on the desired electrical characteristics and the electrical switch arrangement suitable for the desired application.

Additionally, the limitations directed to the above-mentioned properties chosen so as to constitute one or more resultant conductive paths that conform to a desired geometry and a desired electrical characteristic are alternatively interpreted as intended use limitations. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since the prior art teaches a substantially similar structure and composition as the claimed invention, the invention of the prior art appears capable of performing the claimed use.

Regarding claim 8, the prior art teaches that the fabric includes insulating warp fibers neighboring an electrically conductive filament or fiber in the warp, wherein the neighboring insulating warp fibers to an electrically conductive filament or fiber in the warp include a warp float over or under more than one weft yarn (Swallow, paragraphs 0001-0020, Figures 3 and 9-12).

Art Unit: 1794

Regarding claim 9, the prior art teaches that the fabric includes a warp and a weft and insulating weft fibers neighboring an electrical conductor in the weft, wherein the neighboring insulating weft fibers to an electrical conductor in the weft are subject to a weft float over or under more than one warp yarn (Swallow, paragraphs 0001-0020, Figures 3 and 9-12).

Regarding claim 17, the prior art teaches that the electrical characteristic is selected from the group consisting of electrical resistance, capacitance, inductance, impedance and reactance (Swallow, paragraphs 0001-0020, 0035-0043, 0060-0073, 0080, claims 1-16, Figures 1-12).

Regarding claims 18 and 20, the prior art appears to teach that the electrical characteristic is a heterogeneous distribution of resistance along the resultant conductive path and/or across the fabric (Swallow, paragraphs 0001-0020, 0035-0043, 0060-0073, 0080, claims 1-16, Figures 1-12).

Regarding claim 20, the prior art appears to teach that the fabric provides an electrical heating element that exhibits a heterogeneous distribution of heated power dissipation along the resultant conductive path and/or across the fabric (Swallow, paragraphs 0001-0020, 0035-0043, 0060-0073, 0080, claims 1-16, Figures 1-12). Additionally, although the prior art does not disclose the claimed properties, the claimed properties are deemed to naturally flow from the structure in the prior art, since Swallow teaches an invention with a substantially similar structure and chemical composition as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicants to prove otherwise.

Regarding claim 28, as best Examiner can determine, the prior art appears to teach that the conductive path is arranged in series in a spiral manner (Swallow, Figures 10-12).

Art Unit: 1794

Regarding claim 29, as best Examiner can determine, the prior art appears to teach that the fabric includes a parallel structure comprised of a multitude of parallel sub-paths, and that the conductive path is comb-like, with the fingers of the combs being interlaced (Swallow, paragraphs 0071-0092, claim 14, Figures 10-12).

Regarding claims 30-32, 34, 37, and 38, Swallow teaches a fabric having a woven construction with a warp and a weft, the fabric including several spaced elongated first electrically conductive elements included in the warp of the fabric, several spaced elongated second electrically conductive elements included in the weft of the fabric, and crossing the first electrically conductive elements at several crossover points, and elongated insulating elements in the warp and/or weft of the fabric, wherein the fabric includes one or more crossover points at which the first and second electrically conductive elements are permanently biased apart, the permanent biasing being effected by warp and/or weft floats of the first and/or second electrically conductive elements over or under more than one of the elongated insulating elements, and one or more crossover points at which the first and second electrically conductive elements are permanently in conductive communication, the permanent conductive communication being effected by a plain weave in the warp and weft at the crossover point, wherein the permanently biased apart crossover points and the crossover points in permanent conductive communication generate at least one conductive path within the fabric that includes two or more contiguous segments of two or more of the electrically conductive elements (see entire document including paragraphs 0001-0020, 0035-0043, 0060-0073, 0076-0092, claims 1-16, Figures 1-12).

Art Unit: 1794

Additionally, the prior art appears to teach that the contiguous segments together having one or more of a length, a number, an arrangement, and/or a linear resistivity, with the conductive paths providing a desired geometry and desired electrical characteristics (*see for example* Id., paragraphs 0076-0092, Figures 10-12). Additionally and/or alternatively, it would have been obvious to one of ordinary skill in the conductive fabric art at the time the invention was made to form the conductive fabric of the prior art, and adjusting the segments to have a desired length and/or number and/or arrangement and/or linear resistance, based on the desired electrical characteristics and the electrical switch arrangement suitable for the desired application. Additionally, the limitations directed to the above-mentioned properties chosen so as to constitute one or more resultant conductive paths that conform to a desired geometry and a desired electrical characteristic are alternatively interpreted as intended use limitations. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since the prior art teaches a substantially similar structure and composition as the claimed invention, the invention of the prior art appears capable of performing the claimed use.

Regarding claim 31, the prior art teaches that the warp includes elongated insulating elements, and an elongated electrically conductive element neighboring the elongated insulating elements, wherein the insulating elements include a warp float over or under more than one of the elements in the weft (Swallow, paragraphs 0001-0020, Figures 3 and 9-12).

Art Unit: 1794

Regarding claim 32, the prior art teaches that the weft includes elongated insulating elements, and an elongated electrically conductive element neighboring the elongated insulating elements, wherein the insulating elements include a weft float over or under more than one of the elements in the warp (Swallow, paragraphs 0001-0020, Figures 3 and 9-12).

Regarding claim 34, the prior art teaches that the desired electrical characteristics include one or more of resistance, capacitance, inductance, impedance, and reactance (Swallow, paragraphs 0001-0020, 0035-0043, 0060-0073, 0076-0092, claims 1-16, Figures 1-12).

Regarding claim 35, the prior art appears to teach that the desired electrical characteristics include a heterogeneous distribution of resistance along one or more of the conductive path and/or the entire fabric (Swallow, paragraphs 0001-0020, 0035-0043, 0060-0073, 0076-0092, claims 1-16, Figures 1-12).

Regarding claim 37, as best Examiner can determine, the prior art appears to teach that the conductive path is arranged across two or more of the electrically conductive elements in series in a spiral manner (Swallow, Figures 10-12).

Regarding claim 38, the prior art teaches that the conductive path includes interdigitated subpaths (Swallow, Figure 3-12).

In the event it is shown that Swallow does not disclose the claimed invention with sufficient specificity, the invention is obvious because Swallow discloses the claimed constituents and discloses that they may be used in combination.

Claim Rejections - 35 USC § 103

8. Claim 15, 18, 20, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swallow, as applied to claims 1, 8, 9, 17, 18, 20, 28-32, 34, 35, 37, and 38 above, and further in view of USPN 6,333,736 to Sandbach.

Regarding claims 15 and 33, the prior art does not appear to teach that the two or more contiguous segments are of two or more electrical conductors that exhibit differing linear resistivities. Since the prior art does not teach the specific electrical conductors suitable for the invention of the prior art, it would have been necessary and therefore obvious to look to the prior art for conventional electrical conductors. Sandbach teaches a substantially similar electrically conductive woven fabric as Swallow, comprising electrically conductive elements, relatively low resistance conductive elements and insulating elements, wherein the sizes of the conductive elements may be adjusted in comparison to the insulating elements (Sandbach, column 1 line 5 to column 2 line 7, column 2 lines 52-67, column 3 lines 1-30, column 6 lines 45-67, column 7 line 1 to column 8 line 13, column 9 line 57 to column 9 line 13). Sandbach teaches that the resistivity may be controlled by selecting an appropriate fiber type or adjusting the thickness of the fiber. Sandbach teaches that the inclusion of conductive and low resistance conductive elements makes it possible for a voltage indicative of position to be determined. It would have been obvious to one of ordinary skill in the electrically conductive textile art at the time the invention was made to form the electrically conductive textile of the prior art, wherein the conductive elements are of variable size and resistivity, as taught by the prior art and Sandbach, motivated by the desire of forming a conventional electrically conductive textile with conductive elements known in the art to be predictably suitable for use in electrically conductive textiles,

Art Unit: 1794

and one of ordinary skill in the art would recognize that varying the resistivities in the textile would similarly predictably vary the electrical properties of the textile and within the textile, based on the desired application.

Regarding claims 18, 20 and 35, the prior art appears to teach that the electrical characteristic is a heterogeneous distribution of resistance along the resultant conductive path and/or across the fabric and that the fabric provides an electrical heating element that exhibits a heterogeneous distribution of heated power dissipation along the resultant conductive path and/or across the fabric. Additionally, the prior art combination teaches an electrically conductive woven fabric comprising electrically conductive elements, relatively low resistance conductive elements and insulating elements, wherein the conductors exhibit differing linear resistivities. Although the prior art does not specifically disclose the claimed properties, the claimed properties are deemed to be inherent to the structure in the prior art since Swallow teaches an invention with a substantially similar structure and chemical composition as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicants to prove otherwise.

Response to Arguments

9. Applicants' arguments filed September 2, 2009, have been fully considered but they are not persuasive. Applicants argue that it should be apparent that one of ordinary skill in the art at the time the invention was made, who knew of Swallow but not of the claimed invention, would never contemplate the claimed invention in view of Swallow, since the entire purpose of Swallow is to provide a fabric whose electrical properties vary with pressure/flexure, and that it

Art Unit: 1794

cannot be fairly said that one would contemplate an element with fixed geometry/resistance as claimed. Examiner respectfully disagrees. It should be noted that a fixed geometry/resistance is not claimed, as only a desired geometry or a chosen linear resistivity is claimed. Therefore, Applicants' arguments directed to differences based on fixed geometry/resistance characteristics between the invention of the prior art and the claimed invention are not commensurate in scope with the claimed invention.

Additionally, the use of references is not limited to what is described as the invention or to the problems with which it is concerned. They are part of the literature of the art, relevant for all they contain. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. MPEP 2123.

Applicants only claim contiguous segments of electrically conductive filaments or fibers having a length and/or number and/or arrangement and/or linear resistivity chosen so as to constitute one or more resultant conductive paths that conform to a desired geometry and a desired electrical characteristics. Since the claimed invention only recites characteristics of the contiguous segments (such as length or number or arrangement or linear resistivity) which conform to a variable geometry and electrical characteristic, so long as the contiguous segments comprise a length or number or arrangement or linear resistivity which results in a geometry and an electrical characteristic, the contiguous segments meet the limitations of the claim. As set forth above, the prior art teaches contiguous segments having at least a length or a number or an arrangement or a linear resistivity (*see for example* Swallow, paragraphs 0001-0020, 0036, 0037, 0073-0092, Figures 10-12), and it is reasonable for one of ordinary skill in the art to expect that the contiguous segments necessarily comprise a geometry and an electrical characteristics, based

Art Unit: 1794

on the nature of the contiguous segments. Therefore, the prior art appears to teach the claimed invention.

Additionally and/or alternatively, it would have been obvious to one of ordinary skill in the conductive fabric art at the time the invention was made to form the conductive fabric of the prior art, and adjusting the segments to have a desired length and/or number and/or arrangement and/or linear resistance, based on the desired electrical characteristics and the electrical switch arrangement suitable for the desired application. Additionally, the limitations directed to the above-mentioned properties chosen so as to constitute one or more resultant conductive paths that conform to a desired geometry and a desired electrical characteristic are alternatively interpreted as intended use limitations. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since the prior art teaches a substantially similar structure and composition as the claimed invention, the invention of the prior art appears capable of performing the claimed use.

Conclusion

10. Applicants' amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 1794

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER Y. CHOI whose telephone number is (571)272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter Y Choi/
Examiner, Art Unit 1794

/Andrew T Piziali/
Primary Examiner, Art Unit 1794